

# Liberty 114

Single phase single/twin element electricity meter with intimate modular communications hub



Installation efficiency



Remote tariff override



Pay as you go (PAYG)

## Smart, flexible and future proof

Secure Meters has developed the Liberty 114 single phase, single/twin element (configurable), seven terminal smart electricity meter to meet UK smart metering requirements.

Liberty 114 has seven terminals suitable for use with installations with separate switched heating, hot water and 24 Hr heating loads operating on economy 7/10 or Total Heat Total Control installations.

The product offers unique flexibility such that single product can replace any type of legacy restricted heating installations, avoiding the need to carry different installation specific products.

Liberty 114 supports all restricted heating market tariffs, hence single meter can replace multi meter legacy installations. Product enables options for retailer to optimize wholesale cost and hence provide consumer with cheaper heating tariffs.



### Application

- Smart electricity single/twin element, seven terminal meter for use in installation with separate switched loads for space heating, hot water and 24hrs heating loads
- Smart replacement to tele-switched restricted heating meters.
- Dual fuel (electricity+gas) and single fuel (electricity only) domestic customers in both credit and PAYG modes
- Metering for small commercial premises including credit and PAYG modes
- Can support single tariff for all electricity load or separate tariffs for general and heating electricity (configurable)

### Benefits

- Seven terminal meter with 100A switched output on fifth and seventh terminal, 31.5A switched output on sixth terminal
- Designed with the same physical terminal arrangement as a radio telemeter.
- Modular communication module allows multiple WAN and HAN options for different communications providers
- Simplicity in installation, single variant in installer van supports all possible installation scenarios.
- Option for retailer for wholesale cost optimization and reduction in energy prices: Boosting loads when excessive renewable generation
- Assists consumers in reducing energy consumption

### Features

- Meets requirements of SMETS1
- Four-quadrant measurement with import/export registration (on primary element)
- Single element and twin element operation configurable
- Time of use/complex tariffs and maximum demand
- Remote operation of all auxiliary switches
- Option to override tariff schedule for configured duration as per weather forecast and to consume excess renewable generation
- Logging of multi par ameter load survey, billing data, events including power outage and abnormalities.
- Integrated contractor for main and switched outputs.
- GPRS communications.
- Communication hub acts as coordinator for ZigBee HAN and mirror/proxy for gas meter data.
- Credit and PAYG modes (meter maintains account and tariffs)
- Keypad to enable local entry of PAYG UTRN token if WAN not available
- Remote firmware upgrade



## Technical specifications

### Electrical

Connection type	Direct connected
Wiring configuration	Single phase, single or twin element, seven terminal meter
Voltage range	230 Vac (nom)
Current range	0.5-10 (100) A
Accuracy	Active Energy MID Class B, Reactive Energy Class 2.0
Mains frequency	50 Hz ± 5%
Burden	Compliant with EN 50470-1-3

### Compliance

Standards	MID Class B EN 50470-1,3; IEC62053-23;
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### Mechanical

Modular design	Field replaceable communication module
Dimensions	(W x H x D) 147 x 208 x 93 mm
Terminals	Tunnel type with 2 screws
Weight	1.2 kg (approx.)
Enclosure	Flame retardant polycarbonate
Footprint	BS 7856

### Environmental

Ingress protection	IP 53
Insulation class	Protective class II
Temperature	-25 °C to +55 °C (operating), -25 °C to +70 °C (storage)
Humidity	95% non-condensing

### Features

Firmware	Remote firmware upgrade
Tariff	Element 1: Slab, Time of Use (TOU) and Complex (Slab within TOU) supported Element 2: Time of Use (TOU) supported Pending tariff structures supported
Load survey	13 months Active Import (Elements 1 & 2), 3 months Active Export (Element 1) 3 months Reactive Import (Element 1), 3 months Reactive Export (Element 1)
Display	Backlit 10-character alphanumeric starburst display with icons for status
Keypad	12 key 0-9, A, B for local entry of PAYG code and access to displays
PAYG functionality	Credit and PAYG modes (meter maintains account and tariffs) Display of current and historical consumption with cost of consumption data Emergency Credit with optional load limiting Friendly Credit (avoids disconnection during unsocial hours, weekends or special days) Debt recovery
Security	AES128 encryption
Alerts	Removal of terminal cover, main meter cover or communications hub Excessive magnetic field

### Communication

Local diagnostic port	Optical 1107 hardware-compatible port
Communication module options	Skyline-i510 Intimate Communications Hub including GPRS WAN and ZigBee® HAN (SEP 1.1) Multi operator (roaming) SIMs supported

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